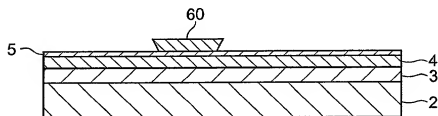
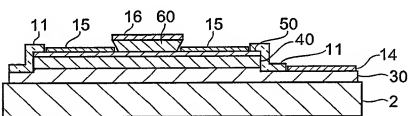


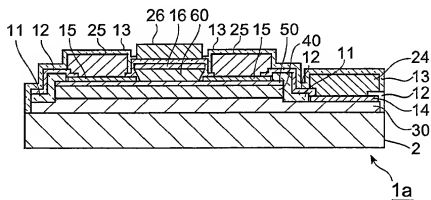
**Fig.1B**



**Fig.1D**

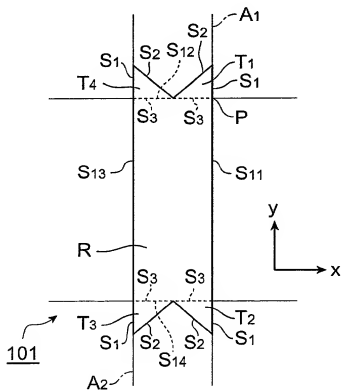


**Fig.1F**

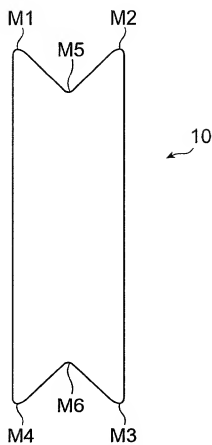


**Fig.2**

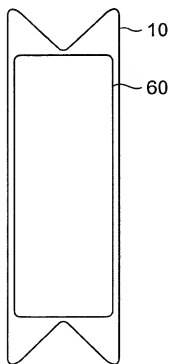
FILM NAME	MATERIALS	CONDUCTIVE TYPE	DOPANT	CARRIER CONCENTRATION (cm <sup>-3</sup> )	FILM THICKNESS (nm)
EMITTER FILM 6	InP	n	Si	$4\sim 20\times 10^{18}$	250
BASE FILM 5	InGaAs	p <sup>+</sup>	Zn	$4\times 10^{19}$	50
COLLECTOR FILM 4	InGaAs	n	Si	$5\times 10^{16}$	500
SUBCOLLECTOR FILM 3	InGaAs	n <sup>+</sup>	Si	$1\times 10^{19}$	300

**Fig.3**

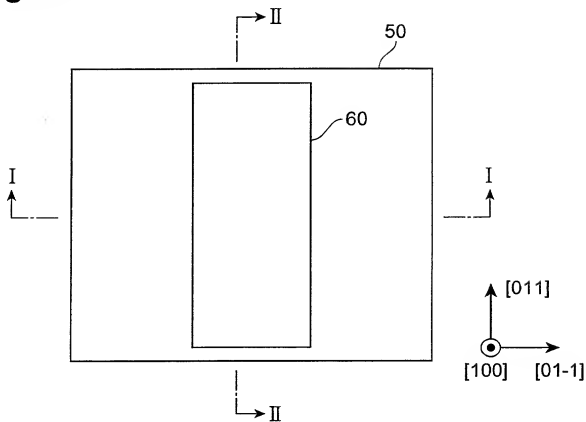
**Fig.4**



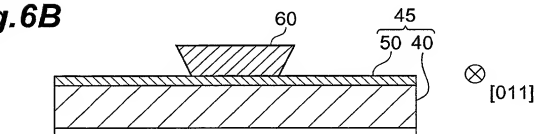
**Fig.5**



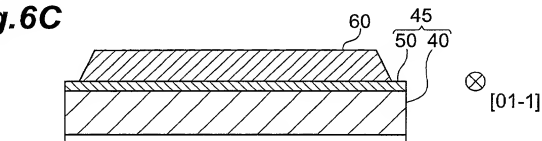
**Fig.6A**



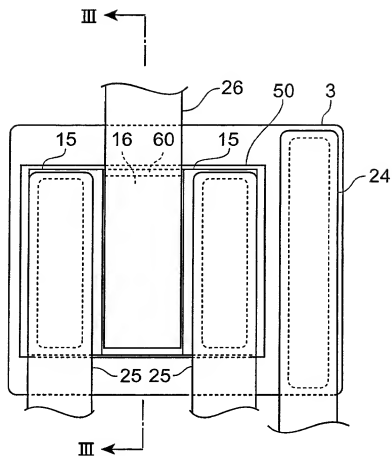
**Fig.6B**



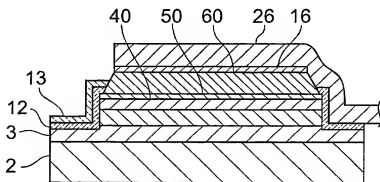
**Fig.6C**



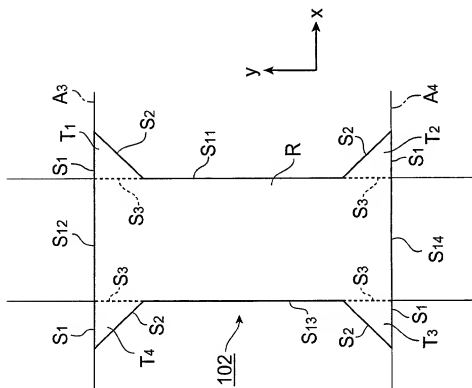
**Fig.7A**



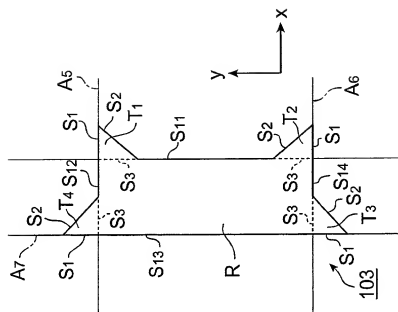
**Fig.7B**



**Fig. 8A**

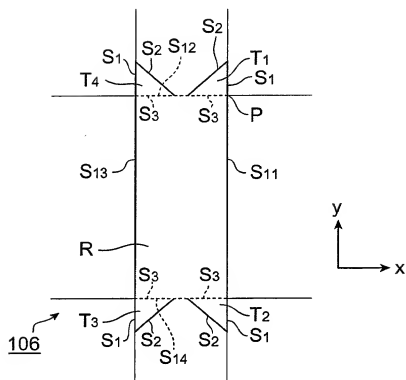


**Fig. 8B**





**Fig.10**

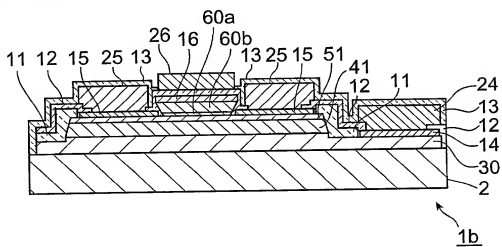




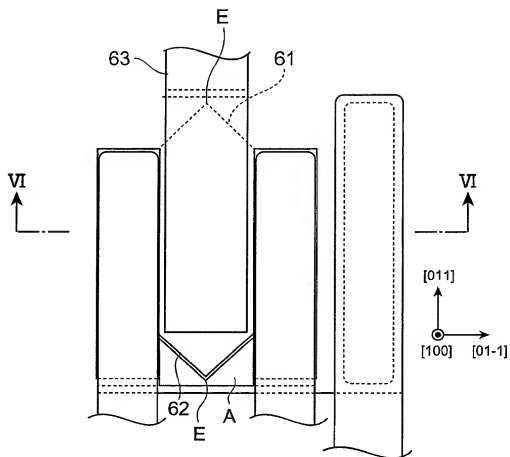
[illegible]

1b

**Fig. 12B**



**Fig.13A**



**Fig.13B**

